

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 (currently amended): An automatic gain control method used in a wireless receiver,
5 the wireless receiver being for receiving a plurality of signal blocks sent by a
wireless transmitter, each of the plurality of signal blocks comprising at least one
frame, the wireless transmitter having a discontinuous transmission mode, the
method comprising:
10 receiving a first frame, amplifying a RF signal corresponding to the first frame with
a gain value and down converting the RF signal to generate a baseband
signal;
15 updating the gain value according to the power level of the baseband signal
corresponding to the first frame, wherein the updated gain value is for
amplifying the RF signal corresponding to a second frame when receiving
the second frame;
20 determining whether a first signal block is in the discontinuous transmission mode
or not, wherein the first frame belongs to the first signal block, wherein
determining whether the first signal block is in the discontinuous
transmission mode or not further comprises:
25 computing a first number of valid frames belonged to the first signal
block;
comparing the first number with a predefined number;
determining that the first signal block is not in the discontinuous
transmission mode if the first number is larger than or equal to the
predefined number; and
determining that the first signal block is in the discontinuous
transmission mode if the first number is smaller than the
predefined number; and

resuming the gain value according to the power level of the baseband signal corresponding to a third frame if the first signal block is in the discontinuous transmission mode;
5 wherein the third frame belongs to a third signal block which is sent before the first signal block and the third signal block is not in the discontinuous transmission mode.

2 (original): The automatic gain control method of claim 1, wherein:
10 the wireless transmitter transmits the RF signal in a frequency hopping manner; and
the first frame, the second frame, and the third frame correspond to the same channel frequency.

3 (original): The automatic gain control method of claim 1, wherein:
15 the wireless transmitter transmits the RF signal with a single channel frequency;
the second frame is the one sent immediately after the first frame; and
the third frame is the last frame of the third signal block.

4 (cancelled)

20 5 (currently amended): The automatic gain control method of ~~claim 4~~ claim 1, wherein computing the first number of valid frames belonged to the first signal block further comprises:
estimating a signal quality metric for each frame belonged to the first signal block;
if a frame has a signal quality metric which is larger than a predefined quality metric,
25 then regarding the frame as a valid frame; and
computing the first number of valid frames belonged to the first signal block.

6 (original): The automatic gain control method of claim 5, wherein the signal quality

metric is a signal-to-noise ratio of the frame belonged to the first signal block.

7 (original): The automatic gain control method of claim 5, wherein the signal quality metric is a signal power level of the frame belonged to the first signal block.

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8 (original): The automatic gain control method of claim 1, wherein updating the gain value according to the power level of the baseband signal corresponding to the first frame further comprises:

comparing the power level of the baseband signal corresponding to the first frame
10 with a desired power level;

increasing the gain value if the power level of the baseband signal corresponding to the first frame is smaller than the desired power level; and

decreasing the gain value if the power level of the baseband signal corresponding to the first frame is not smaller than the desired power level.

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9 (original): The automatic gain control method of claim 8, wherein the baseband signal corresponding to the first frame is an input signal of an analog-to-digital converter used in the wireless receiver.

20 10 (currently amended): A wireless receiver for receiving a plurality of signal blocks sent by a wireless transmitter, each of the plurality of signal blocks comprising at least one frame, the wireless transmitter having a discontinuous transmission mode, the wireless receiver comprising:

an antenna for receiving a RF signal corresponding to a first frame of a first signal
25 block sent by the wireless transmitter;

a receiver module connected to the antenna for amplifying the RF signal corresponding to the first frame with a gain value and down converting the RF signal to generate a baseband signal;

a discontinuous transmission detection module connected to the receiver module for determining whether the first signal block is in the discontinuous transmission mode or not by comparing a first number with a predefined number; the first number corresponds to the number of valid frames belonged to the first signal block; if the first number is not smaller than the predefined number, then the discontinuous transmission detection module determines that the first signal block is not in the discontinuous transmission mode, otherwise the discontinuous transmission detection module determines that the first signal block is in the discontinuous transmission mode;

5 a gain control module connected to the receiver module and the discontinuous transmission detection module for adjusting the gain value used by the receiver module;

10 wherein after receiving the first frame of the first signal block, the gain control module updates the gain value according to the power level of the baseband signal corresponding to the first frame; then the receiver module uses the updated gain value for amplifying the RF signal corresponding to a second frame when receiving the second frame; and if the discontinuous transmission detection module determines that the first signal block is in the discontinuous transmission mode, the gain control module resumes the gain value according to the power level of the baseband signal corresponding to a third frame that belongs to a third signal block sent before the first signal block and the third signal block is not in the discontinuous transmission mode.

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11 (original): The wireless receiver of claim 10, wherein:

the wireless transmitter transmits the RF signal in a frequency hopping manner; and the first frame, the second frame, and the third frame correspond to the same

channel frequency.

12 (original): The wireless receiver of claim 10, wherein:

5 the wireless transmitter transmits the RF signal with a single channel frequency;
 the second frame is the one sent immediately after the first frame; and
 the third frame is the last frame of the third signal block.

13 (cancelled)

10 14 (currently amended): The wireless receiver of ~~claim 13~~ claim 10, wherein for
 computing the first number of valid frames belong to the first signal block, the
 discontinuous transmission detection module estimates a signal quality metric for
 each frame belonged to the first signal block; if a frame has a signal quality metric
 which is larger than a predefined quality metric, then the discontinuous transmission
15 detection module regards the frame as a valid frame.

15 (original): The wireless receiver of claim 14, wherein the signal quality metric is a
 signal-to-noise ratio of the frame belonged to the first signal block.

20 16 (original): The wireless receiver of claim 14, wherein the signal quality metric is a
 signal power level of the frame belonged to the first signal block.

25 17 (original): The wireless receiver of claim 10, wherein for updating the gain value
 according to the power level of the baseband signal corresponding to the first frame,
 the gain control module compares the power level of the baseband signal
 corresponding to the first frame with a desired power level, and increases the gain
 value if the power level of the baseband signal corresponding to the first frame is
 smaller than the desired power level, otherwise the gain control module decreases

the gain value.

18 (original): The wireless receiver of claim 10, wherein the wireless receiver further comprises an analog-to-digital converter for converting the baseband signal corresponding to the first frame to a digital signal.

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19 (currently amended): An automatic gain control apparatus applied in a wireless receiver, the wireless receiver receiving a plurality of signal blocks sent by a wireless transmitter, each of the plurality of signal blocks comprising at least one frame, the wireless receiver having a receiver module for amplifying a received RF signal corresponding to a first frame with a gain value and down converting the RF signal to generate a baseband signal, the wireless transmitter having a discontinuous transmission mode, the apparatus comprising:

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a discontinuous transmission detection module connected to the receiver module for determining whether a first signal block is in the discontinuous transmission mode or not, wherein the first signal block contains the first frame, wherein the discontinuous transmission detection module determines whether a first signal block is in the discontinuous transmission mode or not by comparing a first number with a predefined number; the first number corresponds to the number of valid frames belonged to the first signal block; if the first number is not smaller than the predefined number, then the discontinuous transmission detection module determines that the first signal block is not in the discontinuous transmission mode, otherwise the discontinuous transmission detection module determines that the first signal block is in the discontinuous transmission mode;

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a gain control module connected to the receiver module and the discontinuous transmission detection module for adjusting the gain value used by the

receiver module;

wherein after receiving the first frame of the first signal block, the gain control module updates the gain value according to the power level of the baseband signal corresponding to the first frame; then the receiver module 5 uses the updated gain value for amplifying the RF signal corresponding to a second frame when receiving the second frame; and if the discontinuous transmission detection module determines that the first signal block is in the discontinuous transmission mode, the gain control module resumes the gain value according to the power level of the baseband signal 10 corresponding to a third frame that belongs to a third signal block sent before the first signal block and the third signal block is not in the discontinuous transmission mode.

20 (original): The automatic gain control apparatus of claim 19, wherein:

15 the wireless transmitter transmits the RF signal in a frequency hopping manner; and the first frame, the second frame, and the third frame correspond to the same channel frequency.

21 (original): The automatic gain control apparatus of claim 19, wherein:

20 the wireless transmitter transmits the RF signal with a single channel frequency; the second frame is the one sent immediately after the first frame; and the third frame is the last frame of the third signal block.

22 (cancelled)

25 23 (currently amended): The automatic gain control apparatus of ~~claim 22~~ claim 19, wherein for computing the first number of valid frames belong to the first signal block, the discontinuous transmission detection module estimates a signal quality

metric for each frame belonged to the first signal block; if a frame has a signal quality metric which is larger than a predefined quality metric, then the discontinuous transmission detection module regards the frame as a valid frame.

5 24 (original): The automatic gain control apparatus of claim 23, wherein the signal quality metric is a signal-to-noise ratio of the frame belonged to the first signal block.

10 25 (original): The automatic gain control apparatus of claim 23, wherein the signal quality metric is a signal power level of the frame belonged to the first signal block.

15 26 (original): The automatic gain control apparatus of claim 19, wherein for updating the gain value according to the power level of the baseband signal corresponding to the first frame, the gain control module compares the power level of the baseband signal corresponding to the first frame with a desired power level, and increases the gain value if the power level of the baseband signal corresponding to the first frame is smaller than the desired power level, otherwise the gain control module decreases the gain value.

20 27 (original): The automatic gain control apparatus of claim 19, wherein the wireless receiver further comprises an analog-to-digital converter for converting the baseband signal corresponding to the first frame to a digital signal.